

City of San Diego Planning & Development Review **Building Development Review** 1222 First Avenue • MS-401 San Diego, CA 92101 (619) 446-5400

Building Newsletter 17-1

Special Inspection and Structural Observation Requirements on Plans

Interpretations of State and Local Building Codes 1998 California Building Code: Chapter 17 Revision Date: July 1999

Page 1 of 4

I. General

This building newsletter outlines regulations which have been adopted to assure that special inspection, construction materials testing and structural observation requirements are clearly and prominently visible on the plans and meet the intent of Sections 106.3 and 1701 of the California Building Code (Building Code).

II. Special Inspection Program

When special inspection is required by the Building Code Section 1701, the architect or engineer of record shall prepare an inspection program which shall be submitted to the building official for approval prior to issuance of the building permit. The inspection program shall designate the portions of the work that require special inspection and the name or names of the individuals or firms who are to perform the special inspections, and indicate the duties of the special inspectors.

The special inspector shall be employed by the owner, the engineer or architect of record, or an agent of the owner, but not the contractor or any other person responsible for the work.

The special inspector and/or Special Inspection Agency must be certified by the Field Inspection Services Division of the Planning and Development Review Department. Standard forms for the special inspection and observation program are available and may be picked up at the Field Inspection Services Office.

The summary of work requiring special inspection must be noted on plans.

III. Specifying Special Inspection Information

- A. The designer shall provide on the plans a listing of all the work required to be specially inspected. The list shall be complete and comprehensive and located in a conspicuous place.
 - 1. The following information *must* be provided on that listing or a reference must be provided indicating where it is located on the plans.
 - a. The type of work requiring special inspection (i.e. concrete, high-strength bolts, shotcrete, etc.).
 - b. A description of the work requiring special inspection.
 - c. The sheet numbers of plans or detail number or ICBO approval number where information regarding the work requiring special inspection may be found.
 - d. Allowable design stresses of construction materials and other pertinent information needed to inspect the work and sample the materials specified for testing.

- Where periodic inspection of the work is intended, an outline of the periodic inspection requirements shall be provided in the project plans. Building Code Sec. 1701.6.2.
- When a foundation investigation (soil investigation) is to be performed, the soils investigation report, including date and project number shall be included in the listing.
- 4 . NOTES: The following information shall be provided as footnotes to the special inspection list.
 - a. The special inspections listed are in addition to the called inspections required by Section 108 of the Building Code, as amended. Special inspection is not a substitute for inspection by a City Inspector.
 - b. Continuous inspection is always required during the performance of the work unless otherwise specified. When work in more than one category of work requiring special inspection is to be performed simultaneously, or the physical location of the work is such that it cannot be continuously observed in accordance with the provisions of the Building Code Section 1701.6.1, it is the property owner's or his/her authorized agent's responsibility to employ a sufficient number of inspectors to assure that all the work is inspected in accordance with those provisions.
 - c. The special inspectors must be certified by the City of San Diego, Field Inspection Services, to perform the types of inspection specified.

Exceptions:

- Soils inspections, by the soils engineer of record.
- 2. Smoke Control System, by the Mechanical Engineer of record.
- 3. When waived by the Building Official.
- d. It is the responsibility of the contractor to notify the special inspector or inspection agency at least one working day prior to performing any work that requires special inspection.
- e. Work requiring special inspection that is installed or covered without the approval of the City Inspector is subject to removal or exposure at no cost to this jurisdiction.
- B. A suggested format for including the above information on the plans has been completed as an example. See page 3 of this building newsletter. A clean copy of the suggested format has also been attached.

IV. Final Special Inspection Report

The property owner or his/her authorized agent of

record or the architect or engineer of record, acting as the owner's agent, must complete and sign the Property Owner's Final Report form.

This form states that the work requiring special inspection, structural observation and construction materials testing has been satisfactorily completed.

This form is available from and upon completion must be submitted to the Field Inspection Services Division.

V. Structural Observation Program

- A. When structural observation is required by Section B, the inspection program shall name the individuals or firms who are to perform structural observation and describe the stages of construction at which structural observation is to occur.
- B. Structural observation shall be provided when one of the following conditions exists:
 - 1. The structure is defined in the Building Code Table 16-K as Occupancy Category 1, 2, or 3 or
 - 2. The structure is required to comply with the Building Code Section 403, or
 - 3. The structure N_a (near source factor) as set forth in the Building Code Table 16-S is greater than one, and a lateral design is required for the entire structure,

Exception:

- 1. One- and two-story Group R, Division 3 and Group U occupancies and one-, and two-story Groups B, F, M, and S occupancies.
- 2. When so designated by the architect or engineer of record, or
- 3. When such observation is specifically required by the building official.

The owner shall employ the engineer or architect responsible for the structural design, or another engineer or architect designated by the engineer or architect responsible for the structural design, to perform structural observation as defined in the Building Code Section 220. Observed deficiencies shall be reported in writing to the owner's representative, special inspector, contractor and the building official. The structural observer shall submit to the building official a written statement that the site visits have been made and identifying any reported deficiencies which, to the best of the structural observer's knowledge, have not been resolved.

VI. Refer to the following Building Newsletters for other related information:

- 1. BNL 17-2 Special Inspection and Testing for Concrete and Shotcrete
- 2. BNL 17-3 Special Inspection Requirements for Structural Welding
- 3. BNL 17-4 Sampling, Testing and Special Inspection Requirements for High-Strength Bolts
- 4. BNL 17-5 Bolt/Dowel/Rod Installation using Adhesive anchor Systems

- 5. BNL 17-6 Off-Site Fabrication of Building Components
- 6. BNL 17-7 Approval of Products and Construction Materials Testing Laboratories
- 7. BNL 17-8 Prefabricated Construction
- 8. BNL 17-9 Smoke Control System

VII. Forms

The following forms are available upon request from the Inspection Services Division:

- 1. Property Owner/Contractor Agreement for Special Inspection/Construction Materials Testing/ Structural Observation— INSTRUCTIONS.
- 2. Property Owner/Contractor Agreement for Special Inspection/Construction Materials Testing/Structural Observation—AGREEMENT FORM. To be completed and submitted by the property owner or his/her authorized agent of record or the architect/engineer of record acting as the property owner's agent and the contractor/builder at the time of permit issuance.
- 3. **Application to Perform Off-Site Fabrication.** To be completed by the fabricator of building components when such components are fabricated within the premises of a fabricators shop. This application must be filed for approval one business day prior to scheduled fabrication commencement date. Also see Certificate of Compliance for Off-Site Fabrication.
- 4. **Certificate of Compliance for Off-Site Fabrication.** To be completed by the fabricator of building components when such components are fabricated within the premises of a fabricators shop. This form must be filed for approval prior to erection of fabricated components. Also see Application to Perform Off-Site Fabrication.
- 5. **Property Owner's Final Report.** To be completed by the property owner or his/her authorized agent of record or the architect/engineer of record acting as the property owner's agent for the types of work required to have special inspection, construction materials testing or structural observation. This form must be filed prior to request for final inspection.
- 6. Special Inspection Agency/Construction Materials Testing Laboratory Final Report. To be completed by the special inspector or the special inspection agency or the construction materials testing laboratory after all work requiring special inspection or testing have been completed.
- 7. Approved Construction Materials Testing Laboratories and Special Inspection Agencies. List of Agencies. This list is subject to change without notice. Call the City of San Diego Inspection Services for the most current list.

VIII. Other Information

For questions regarding special inspection, structural observation, materials testing and off-site fabrication you may contact Inspection Services at (858) 492-5070.

Summary of Special Inspection

- Bolts installed in concrete Special moment-resisting concrete frame Reinforcing steel and prestressing steel tendons
- All structural welding Special moment-resisting steel frame Welding reinforcing steel

- High-strength bolting Structural masonry Reinforced gypsum concrete
- Insulating concrete fill
 Spray-applied fire-resistive materials
- 5.1 5.2 5.3 6 7 8 9 10 11 12 Piling, drilled piers and caissons
- Shotcrete

- Verify soil conditions are substantially in conformance with the soil
- investigation report Verify that foundation excavations extend to proper depth and 13.2 bearing strata
- 13.3 Provide soil compaction test results, depth of fill, relative density, bearing values
- Provide soil expansion test results, expansion index, recommendations for foundations, on-grade floor slab design for each building
- Special cases (specified by the Building Official) Off-site fabrication of building components 15 16
- Other special cases (specified by designer of record)

(Use additional sheets as needed to provide a comprehensive list)

No.	Description of Type of Inspection Required, Location, Remarks, etc.	Design Strength
1	ALL CAST-IN-PLACE CONCRETE SHEET S1, GENERAL NOTE SHEAR WALLS	5000 PSI
	CONCRETE FILL OVER DECKING	4000 PSI
	FOOTINGS, GRADE BEAMS	3000 PSI
5.1	GENERAL NOTES: STRUCTURAL STEEL, NOTES #4 AND #5	E-70XX
16	SHOP WELDING	
	NOTE: SEE BUILDING NEWSLETTER 17-6 FOR OFF-SITE FABRICATION. ALL SHOPS MUST BE APPROVED BY THE CITY OF SAN DIEGO FIELD INSPECTION SERVICES PRIOR TO COMMENCING ANY FABRICATION.	
	STRUCTURAL STEEL SHEET, SHEET S1.1, S4.1, S4.3	E70XX
	DECK WELDING, SHEET S1.1, DET. 14/S3.1	E70XX
7	MASONRY, RET. WALL DET. 5/S4.2	F¹m=1500 psi
4	PLACEMENT OF REINFORCING STEEL AT CONCRETE, SHEET S2.1, DET. 10/S3.1, 11S3.1 GRADE BEAMS AND CAISSONS	Fy=60 ksi
10	STEEL COLUMNS, BEAMS AND DECKING IDENTIFIED ON PLAN SHEET S2.1	
13.1	SOIL ENGINEER TO VERIFY CONDITIONS AND DEPTH OF FOUNDATIONS AND PROVIDE COMPACTION REPORT.	2000 psf
13.2	SOILS REPORT BY XYZ GEOTECHNICAL AND SOILS ENGINEERING INC. REPORT NO. 90-89112, JANUARY 15, 1998	
17	EPOXY, ADHESIVE ANCHOR INSTALLATION, DET. 18/S4.1, ICBO 9999	

- The special inspections listed are in addition to the called inspections required by Section 108 of the UBC, as amended. Special inspection is not a substitute for inspection by a City Inspector.
- Continuous inspection is always required during the performance of the work unless otherwise specified. When work in more than one category of work requiring special inspection is to be performed simultaneously, or the geographic location of the work is such that it cannot be continuously observed in accordance with the provisions of UBC Section 1701.6.1, it is the agent's responsibility to employ a sufficient number of inspectors to assure that all the work is inspected in accordance with those provisions.
- The special inspectors must be certified by the City of San Diego to perform the type of inspection specified.

Exceptions:

- Solis inspections by the soils engineer of record.
 Smoke Control System, by the Mechanical engineer of record.
- 3. When waived by the Building Official.
- It is the responsibility of the contractor to notify the special inspector or inspection agency at least one working day prior to performing any work that requires special
- $Work \ requiring \ special \ in spection \ that \ is \ in stalled \ or \ covered \ without \ the \ approval \ of \ the$ City Inspector is subject to removal or exposure at no cost to this jurisdiction.

Shotcrete

Summary of Special Inspection

13.1 Concrete Verify soil conditions are substantially in conformance with the soil Verify that foundation excavations extend to proper depth and 2 3 4 5.1 5.2 5.3 6 7 8 9 Bolts installed in concrete Special moment-resisting concrete frame Reinforcing steel and prestressing steel tendons 13.2 bearing strata All structural welding
Special moment-resisting steel frame 13.3 Provide soil compaction test results, depth of fill, relative density, bearing values
Provide soil expansion test results, expansion index, recommenda-Welding reinforcing steel High-strength bolting Structural masonry tions for foundations, on-grade floor slab design for each building 14 15 16 Reinforced gypsum concrete Smoke-control system Special cases (specified by the Building Official)
Off-site fabrication of building components
Other special cases (specified by designer of record) Insulating concrete fill
Spray-applied fire-resistive materials
Piling, drilled piers and caissons

(Use additional sheets as needed to provide a comprehensive list)

No.	Description of Type of Inspection Required, Location, Remarks, etc.	Design Strength

- The special inspections listed are in addition to the called inspections required by Section 108 of the UBC, as amended. Special inspection is not a substitute for inspection by a City Inspector.
- Continuous inspection is always required during the performance of the work unless otherwise specified. When work in more than one category of work requiring special inspection is to be performed simultaneously, or the geographic location of the work is such that it cannot be continuously observed in accordance with the provisions of UBC Section 1701.6.1, it is the agent's responsibility to employ a sufficient number of inspectors to assure that all the work is inspected in accordance with those provisions.
- The special inspectors must be certified by the City of San Diego to perform the type of inspection specified.

Exceptions:

- Soils inspections by the soils engineer of record.
- Smoke Control System, by the Mechanical engineer of record.
 When waived by the Building Official.
- It is the responsibility of the contractor to notify the special inspector or inspection agency at least one working day prior to performing any work that requires special
- Work requiring special inspection that is installed or covered without the approval of the City Inspector is subject to removal or exposure at no cost to this jurisdiction.